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Appln No. 10/731,385
Amdt date September 5, 2007
Reply to Office action of June 22, 2007

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A field emission display, comprising:
a first substrate and a second substrate opposing one another with a gap therebetween, the first substrate and the second substrate being sealed using a sealant wherein a vacuum assembly is formed between the first substrate and the second substrate in a region encompassed by the sealant;
an electron emission assembly located on the first substrate for emitting electrons by generation of electric fields within the electron emission assembly; and
an illumination assembly located on the second substrate for realizing a display of images by electrons emitted from the electron emission assembly,
wherein the illumination assembly includes (a) a transparent conductive layer located on a surface of the second substrate, the transparent conductive layer having a portion extending beyond the sealant as an anode input terminal to which an anode voltage is applied, (b) a phosphor screen located on the transparent conductive layer, and (c) a metal layer located on the phosphor screen within the vacuum assembly, a portion of the metal layer contacting and electrically connected to the transparent conductive layer.

2. (original) The field emission display of claim 1, wherein the transparent conductive layer and the anode input terminal are integrally formed.

3. (original) The field emission display of claim 2, wherein the transparent conductive layer and the anode input terminal are made of films of indium tin oxide.

Appln No. 10/731,385
Am dt date September 5, 2007
Reply to Office action of June 22, 2007

4. (original) The field emission display of claim 1, wherein the metal layer is formed over the phosphor screen having an area larger than the phosphor screen such that edges of the metal layer contact the transparent conductive layer.

5. (original) The field emission display of claim 1, wherein the electron emission assembly includes electron emission sources and electrodes for inducing the emission of electrons from the electron emission sources, and wherein the electrodes include cathode electrodes and gate electrodes insulated from each other by an insulation layer and formed in respective stripe patterns, the cathode electrodes being substantially perpendicular to the gate electrodes.

6. (original) The field emission display of claim 5, wherein the electron emission sources are made of a carbon-based material selected from a group consisting of carbon nanotubes, graphite, diamond, diamond-like carbon, C₆₀ (Fullerene), or a combination of these materials.

7. (original) The field emission display of claim 5, further comprising the gate electrodes being formed on the first substrate, the insulation layer being formed on the first substrate covering the gate electrodes, the cathode electrodes being formed on the insulation layer, and the electron emission sources being formed on the cathode electrodes.

8. (original) The field emission display of claim 5, further comprising the cathode electrodes being formed on the first substrate, the insulation layer being formed on the first substrate covering the cathode electrodes, the gate electrodes being formed on the insulation layer, the insulation layer and the gate electrodes including openings for exposing the cathode electrodes, and the electron emission sources being formed in the openings on the exposed cathode electrodes.

Appln No. 10/731,385
Am dt date September 5, 2007
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9. (currently amended) A field emission display, comprising:

a first substrate and a second substrate opposing one another with a gap therebetween, the first substrate and the second substrate being sealed using a sealant wherein a vacuum assembly is formed between the first substrate and the second substrate in a region encompassed by the sealant;

an electron emission assembly located on the first substrate for emitting electrons by generation of electric fields within the electron emission assembly; and

an illumination assembly located on the second substrate for realizing a display of images by electrons emitted from the electron emission assembly,

wherein the illumination assembly includes a phosphor screen located on a first surface of the second substrate, a metal layer located on the phosphor screen within the vacuum assembly, and an anode input terminal extending from within the vacuum assembly to outside of the sealant, in which

wherein an end of the anode input terminal within the vacuum assembly contacts both the phosphor screen and the metal layer and a portion of the anode input terminal extending beyond the sealant is configured to receive an anode voltage, and

wherein the anode input terminal is formed from a transparent conductive material.

10. (currently amended) The field emission display of claim 9, wherein the anode input terminal is ~~a thin film made from a material selected from a group consisting of an indium tin oxide film, Ni, and Cr.~~

11. (original) The field emission display of claim 9, wherein the metal layer covers entirely the phosphor screen and a portion of the anode input terminal.

12. (previously presented) The field emission display of claim 9, wherein the electron emission assembly includes electron emission sources and electrodes for inducing emission of electrons from the electron emission sources, and

Appln No. 10/731,385

Amtd date September 5, 2007

Reply to Office action of June 22, 2007

wherein the electrodes include cathode electrodes and gate electrodes, the cathode electrodes and the gate electrodes being insulated from each other by an insulation layer and formed respectively in a stripe pattern, the cathode electrodes being substantially perpendicular to the gate electrodes.

13. (original) The field emission display of claim 12, wherein the electron emission sources are made of a carbon-based material selected from a group consisting of carbon nanotubes, graphite, diamond, diamond-like carbon, C₆₀ (Fullerene), or a combination of these materials.

14. (original) The field emission display of claim 12, further comprising the gate electrodes being formed on the first substrate, the insulation layer being formed on the first substrate covering the gate electrodes, the cathode electrodes being formed on the insulation layer, and the electron emission sources being formed on the cathode electrodes.

15. (original) The field emission display of claim 12, further comprising the cathode electrodes being formed on the first substrate, the insulation layer being formed on the first substrate covering the cathode electrodes, the gate electrodes being formed on the insulation layer, the insulation layer and the gate electrodes including openings for exposing the cathode electrodes, and the electron emission sources being formed in the openings on the exposed cathode electrodes.

16. (previously presented) A flat panel display, comprising:
a faceplate having a faceplate interior side;
a backplate having a backplate interior side in an opposing relationship to the faceplate interior side;
sidewalls positioned between the faceplate and the backplate to form an enclosed vacuum envelope between the sidewalls, the backplate interior side and the faceplate interior side;

Appln No. 10/731,385
Amdt date September 5, 2007
Reply to Office action of June 22, 2007

a phosphor layer positioned on the faceplate interior side;
a transparent conductive layer located between the faceplate and the phosphor layer;
a metal layer positioned on the phosphor layer,
wherein the metal layer is located entirely within the vacuum envelope, and
wherein the transparent conductive layer includes an anode input terminal extending from
within the vacuum envelope to outside the sidewalls.

17. (original) The flat panel display of claim 16, wherein the metal layer has a
larger area than the phosphor layer.

18. (previously presented) The flat panel display of claim 16, wherein the metal layer
contacts the anode input terminal within the vacuum envelope and an anode voltage is applied to
the anode input terminal outside the sidewalls.

19. (canceled)

20. (canceled)

21. (canceled)

22. (canceled)

23. (previously presented) An illumination assembly for a field emission display
realizing a display of images by electrons emitted from an electron emission assembly within a
vacuum assembly between substrates sealed by a sealant, comprising:

a substrate;
a transparent conductive layer located on a surface of the substrate, the transparent
conductive layer having a portion extending beyond the sealant and having an anode input

Appln No. 10/731,385
Amdt date September 5, 2007
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terminal as a portion of the transparent conductive layer extending beyond the sealant to which an anode voltage is applied;

a phosphor screen located on the transparent conductive layer; and
a metal layer located on the phosphor screen, and having a portion of the metal layer for contacting and electrically connecting to the transparent conductive layer within the vacuum assembly.

24. (original) The illumination assembly of claim 23, wherein the transparent conductive layer and the anode input terminal are integrally formed.

25. (original) The illumination assembly of claim 23, wherein the metal layer is formed over the phosphor screen having an area larger than the phosphor screen such that edges of the metal layer contact the transparent conductive layer.